Sheep as a Vegetation Management Tool

Discussion Paper

Ministry of Forests

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I. Introduction:

In 1985 some of the Cariboo Region's field staff noticed that an area of sheep grazing might perhaps provide some benefit for Vegetation Management. Subsequent to that there were some queries, by both Licensees and Sheep Breeders, about using sheep on a formal basis for Vegetation Management control. The Regional staff were aware of a number of problems associated with the treatment and referred the question to the Chief Forester. In consequence, in April 1986, the Chief Forester struck a Task Group. Their mission was to complete an internal report to the Executive on the feasibility of using sheep, and the administrative framework required.

The Task Group reported to the Executive in mid April. Subsequently the report was accepted with the requirement that a discussion paper be distributed for public input.

II Current Activity

The action committee that the Task Group requested was created. It has produced a report defining the trial designs that should be used in all regions conducting experiments. In the summer of 1986, small trials will be carried out. In addition, a procedure to learn more from the project at Hendrix Lake has been prepared.

These activities are undertaken to ensure that the Ministry continues to collect valuable information to help decisions in the future. The recommendation of the Task Group to limit activity to trials was accepted. At this stage input from the public, with their varying viewpoints is required to guide extension of the program.

III Request for public comment

The Task Group report is shown in the Appendix. It was of necessity brief as the reporting time was short.

The review showed that using sheep for Vegetation Management has potential but there are some constraints and limitations.

The constraints affect location where sheep could work. Clearly sheep cannot tackle 10 metre high alder or 5 metre high salmonberry. There are also constraints required to protect wildlife concerns. These represent some of the critical issues about which discussion is required.

The limitations are affected primarily by the size of the program. The government has established the size of the Vegetation Management Program and it is not unlimited. The Ministry is required to practice good management which implies careful allocation of our limited resources to those areas most needing treatment. The primary criterion for judgement, of any Vegetation Management or other Silvicultural tool, is "good value" for the expenditures.

Comments by members of associations or the general public who have an interest in this area would be welcomed.

IV Time schedule for submission

It is requested that comments and suggestions be sent to the Ministry by August the 29th 1986 to A.C. MacPherson, Deputy Minister, Ministry of Forests, 1450 Government Street, Victoria, British Columbia, V8W 3E7.

V Appendix

Sheep as a Vegetation Management Tool

Report from the Task Group

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Appendix A.
Items and criteria for further investigation

SHEEP AS A VEGETATION MANAGEMENT TOOL

REPORT FROM THE TASK GROUP

A. An Opportunity to Investigate

i) Introduction

Although sheep as a vegetation management tool shows opportunity, there is insufficent biological information for B.C. to recommend operational use immediately. There is a substantial body of literature enumerating trials in which the results are quite variable. What is striking is that although there are a number of successes, the characteristics that ensure success are elusive. Most of the trials are also in entirely different environments than those in B.C.: New Zealand, Australia, and Coastal Oregon contrasted to the interior of B.C.

In B.C., the work at Hendrix Lake started in 1984, not as a test of sheep as a vegetation management tool, but rather as a regular grazing project. In that aspect it failed. It was subsequently picked up as a potential opportunity as a vegetation management tool. It's results are not conclusive, nor was it designed as a trial with results that can be replicated. It is far from certain that the level of vegetation reduction that occurred on the cut blocks will be of significant benefit to the crop of conifers. There are also considerable difficulties in terms of the distribution of treatment: the grazing is patchy and considerable amounts of the perimeter were not effectively grazed. In the opinion of staff from the Cariboo, treatments such as this would probably require additional treatments by either manual or chemical means to deal with the patches and perimeter.

It is because of the lack of definite prescriptive techniques for using sheep as a vegetation management tool, that the task group decided that further investigations were necessary before undertaking substantial areas on an operational basis.

ii) Duration

Since the objective of vegetation management techniques is to ensure free growing stands, the results of any particular technique cannot be evaluated until such stands become free growing. In the enviroments where this technique is expected to be tested, higher elevation sites growing spruce, full results will take at least three to five years. Since that is a substantial period, but necessary due to growth rates of brush and weeds compared to crop trees in their early stages, it is imperative that the assessments and establishment of the investigations proceed rapidly. At the same time, to ensure that the Ministry takes full opportunity of a potentially beneficial technique, we are recommending more rapid evaluation of existing projects that may well lead to a limited interim use.

B. Scope of Area Potentially Eligible for Treatment by Sheep as Vegetation Management Tool

There are a number of factors that will affect and limit areas that can be treated by this technique.

1) Exclusions by wildlife considerations.

Wildlife branch has expressed some concerns about the use of sheep. The two most important factors are a) carrying of disease, and b)incursion into grizzly bear areas.

The concern about disease is straight forward: domestic animals can carry disease and infect wildlife populations that can be dramatically affected.

The grizzly bear concerns are related to predator control. The population is declining and grizzly bears are considered a protected animal. The concerns also exist with coyote, wolf and cougars but to a lesser extent. Despite the agreement that wildlife has with Agriculture that agricultural incursions into wildlife areas are at risk of predation and that wildlife will not control predators, the net result is often illicit predator control. Since sheep form a pleasant dietary relief for grizzly, the grizzly tend to be attracted to flocks of sheep. For that reason wildlife are strongly against taking sheep into grizzly bear territory. This will clearly diminish the area that could be treated.

2) Types of stands and vegetation complexes that they can eat.

Sheep will only graze certain types of vegetation. They clearly enjoy both fireweed and lupin, but are equally completely incapable of grazing woody vegetation over a metre in height. Thus those areas that require brushing and weeding that do not contain plants that are edible for sheep will reduce the area potentially treatable.

3) Susceptibility of tree species to damage

Sheep browse some tree species and not others. Spruce appears not to be palatable, while Douglas-fir and Lodgepole pine are. The area eligible for treatment will then be limited by the area regenerated to spruce or for other species where terminal buds are out of reach.

4) High piority brushing and weeding areas.

The Ministry's five year program has insufficient brushing and weeding goals to satisfy all needs. It is therefore imperative to ensure that our limited dollars and goals are used most cost effectively. This means we must rank areas needing brushing and weeding into high, medium, and low categories. We recommend limiting the areas treatable to only those of high priority brushing and weeding.

The net result of the above four factors will be to give an estimate of the hectares eligible for vegetation management by sheep. This in turn can be developed into a five year plan. The purpose of developing such a five year plan would be to identify the scope of the treatable area and indicate to potential contractors the level of work that can be expected. We in turn would expect them to plan their flock sizes in accordance with those plans. It should be noted that there is no reserve for any particular method. Just as areas are not set aside for sole treatment by herbicides, neither will areas be set aside solely for sheep.

Other areas as normal grazing.

The four factors used to identify the scope of area potentially treatable by sheep will naturally leave some other areas open that could be grazed by sheep for purposes other than vegetation management. Our recommendation is that these should be treated as normal grazing tenures.

C. Administrative Issues

i) Financial

Under this subject we considered mechanisms for funding such treatments and some issues that we could not follow in detail.

One such issue is the impact on the sheep meat and wool market. Clearly if the tool turns out to be an effective one and grows in size, it could have an impact on those markets. We felt that evaluation of that was beyond the scope of our task group. However, if the preceding section on scope of eligible area indicates a large area, and initial results of investigation show promise, we would recommend that the Range Branch, with the Ministry of Agriculture, evaluate the impact on markets.

We would expect the payment for sheep as a vegetation management tool to be treated the same as we would for any other vegetation management tool: contract proposals. This would mean that any of our normal funding sources could be used such as Ministry vote, Section 88, FRDA, etc. In addition since there is potentially benefit to the contractor for the grazing, we would expect an offset. We would recommend this be managed in the same way as other Silvicultural treatments such as commercial thinning and site rehabilitation.

An example for site rehabilitation is that we would strike a Silvicultural Contract for stand conversion for alder, but if there is a minor timber value of conifers, a cash sale or other minor sale would be established. The payment to the contractor consists of the Silvicultural Contract price less the offset for the sale of the wood. We recommend the same approach for using sheep where the bid for the treatment as a vegetation management tool is reduced by the grazing fees and rent.

For many Silvicultural objectives, more than one method can be used. To help evaluate alternatives, not only economically but also on their impact, the Decision Making Profile was developed. It is recommended that this technique be used in considering alternatives, especially in the early development. When using it however it is important that there should be full costing of alternatives. Where there is an alternative that requires repeat treatments to get the same result as a single treatment, not only the direct onsite costs, but also substantial overhead costs for administering multiple contracts must be considered.

ii) Legal

There are a number of potential legal impacts that should be evaluated with legal counsel.

The most important of these will be the impact of the Range Act on future rights of the grazer. Our recommendation for funding was that a Silviculture Contract be used in conjunction with a grazing permit. It is recommended that Range Branch get legal advice on the implication of charging both fees and rent, and consequences for future rights. Since the mechanism being discussed is intended as a treatment tool, not a development of grazing rights, it is recommended that we evaluate options under the Range Act to limit the permit to just vegetation management treatment. In consequence we would also recommend that the contract should explicitly state that there would be "no commitment for future grazing beyond the vegetation management project".

Clarification is also required on the issue of third party contracting. If a licensee were to undertake brushing and weeding through the use of sheep, we expect the Ministry to have a contract with the licensee for Section 88 payments. We would expect that the licensee would ensure the shepherd has an appropriate grazing permit. The legality of this situation should be evaluated.

Another issue requiring legal evaluation is that associated with risk and liability. Who would be liable for damage to non-target areas or species? Who would be liable for bearing costs of predation? It is recommended that the Crown limit its liability and that particularly with respect to predation, the contractor be fully responsible. With respect to liability for damage to the crop in the treated area and in non-target areas, we would expect similar treatment to other Silvicultural projects. This would mean that the contractor would be liable to penalty for damage created beyond set levels.

It is recommended that, given the method is biologically effective, sheep not displace cattle in grazing plans. If, however, a cattle rancher has rights over an area that has species such as fireweed that are not as palatable for cattle, it might be feasible to use sheep to help. The legality and procedures would have to be devised by Range Branch.

iii) Field administration

There are two items to consider under this heading: consultation with Fish and Wildlife and feasibility of contracting.

Wildlife expressed strong concerns over extensive use of sheep. It is therefore imperative that consultation with local Fish and Wildlife managers occur to resolve potential conflicts. It is expected that particularly with the two issues of disease transmission and incursion into grizzly territory, sheep will be proscribed. Equally wildlife expects to develop reasonable compromises wherever feasible.

Some issues related to contracting have been listed elsewhere. The task group feels that if research shows biological feasiblity for the technique, then contracts for use of the tool can be structured. As with most new contracts, it is unlikely that all issues would be covered in the first round. However the Silvicultural program has considerable experience in use of contracts to accomplish work, and there is no doubt that such problems are soluble. It is recommended that Range staff administer the grazing permit, while Silviculture staff administer the silviculture contract.

D. Action Committee

It is recommended that a small provincial group be established to control research and pilot projects. This is required due to the recurrence of pressure throughout the province on the potential use of sheep. Without such a controlling group, it is felt that numerous ad hoc pilot projects could occur.

It is recommended that the action committee immediately establish specialists to perform i) a review of the literature and summary of existing information on the issue of sheep grazing, and ii) evaluate existing proposals and projects, and iii) recommend an implementation schedule. These recommendations should lead towards standard experimental designs to be used in the field. This may well result in more than one level of design: some projects should probably be detailed research, while well planned simple pilot projects can also usefully proceed. This would allow the extention of existing projects, such as Hendrix Lake, if deemed appropiate.

It is recommended that the action committee consist of a person from Silviculture, Range, Research and Wildlife branches. The Research person would be expected to develop experimental designs, with the Range, Silviculture and Wildlife representatives confirming the user objectives and constraints. The implementation of the designs would be through the Regional Forestry Manager and his Research staff.

E. Other Concerns

Although it is recommended that such vegetation management contracts should make it clear there is no commitment for future grazing, there could be difficulties if a sheep rancher develops a flock and subsequently fails to win contracts. As with most other Silvicultural contracts, tenders should be proffered and contracts won on the basis of fair value for money. However it is recommended that a commitment be obtained by the Ministry from the Sheep Breeders Association that it is understood that success in one contract does not of necessity imply long term employment. The sheep rancher must be prepared to care for his sheep in the circumstance that he not gain further contracts. It is recommended that such a commitment be obtained in writing.

F) Summary of Recommendations

A1. Further investigations should be made before proceeding with operational projects.

A2. Full evaluation of the impact on free growing stands will take 3-5 years, therefore rapid re-evaluation of existing projects must occur to expedite operational feasibility.

B1. The area eligible for treatment after considering
1) exclusions by wildlife considerations,
2) types of vegetation that sheep can eat,
3) susceptibility of tree species to damage, and
4) high priority brushing and weeding areas
should be estimated.

B2. The area determined in B1 should be laid out in conjuction with the five year plan, but no area is reserved for a specific tool.

B3. If an area does not meet all criteria specified in B1, it should not be treated as a vegetation management project but should be treated as a normal grazing project, but no area is reserved for a specific tool.

C1. If using sheep for vegetation management is likely to become common, Range branch should evaluate the expected impact on the market.

C2. Payment for vegetaion management should be on the basis of a competitive bid on the work with an offset for the grazing benefit.

C3. If using sheep for vegetation management becomes an operational tool, initially, all potential sheep projects should be evaluated with the Decision Making Profile. This will ensure good value for public funds.

C4. The contract and permit should make it clear that the person undertaking a vegetation management project with sheep does not thereby gain future grazing rights.

C5. Range branch should obtain legal advice on whether charging fees and rent grants future grazing rights.

C6. The legality of Section 88 contracts using grazing permits should be confirmed.

C7. The contractor should be liable for 1) damage to non-target areas, 2) damage, above a set level, to crop trees on the area, and 3) should be responsible for the costs of predation.

C8. Sheep should not displace cattle.

C9. Before any sheep project is approved Fish and Wildlife must be consulted about their concerns over predator impact and disease spread. Contractors cannot expect Wildlife branch to provide predator control, nor will killing of grizzly be tolerated.

C10 If sheep as a vegetation management tool is shown biologically feasible, Range staff should set up the grazing permit and the Silviculture staff should then administer the Silviculture contract.

C11 If sheep as a vegetation management tool becomes operational it must be clear that it should not receive preferential subsidies compared to alternative techniques. Therefore 1) a request should be sent to the Ministry of Agriculture asking them to notify the Ministry of Forests of subsidies given, 2) the tender must require disclosure of subsidies, and 3) an equalisation formula should be applied.

D1 An action committee should be established to expedite trial design and project re-evaluation.

E1 Potential contractors must give an assurance that they are prepared to care for their sheep in the circumstance they not gain further contracts.